

CENTER FOR BEAM PHYSICS SEMINAR

“Studies of Aberration in the Photoemission Electron Microscope PEEM3”

Weishi Wan
ALS (LBNL)

Friday August 2nd, 2002, 10:30 AM
Albert Ghiorso Conference Room (71-264), LBNL
••• Refreshments served at 10:20 AM •••

Abstract: New-generation photoemission electron microscopes are being built or designed around the world to meet user demands for higher flux and resolution. A project called PEEM3 is underway at the ALS to replace the existing microscope PEEM2 to increase transmission at resolution of 20 nm from ~2% to ~20%, and to improve the best resolution from 20 nm to 3-4 nm. To achieve this goal, resolution-limiting aberrations in the objective lens have to be corrected. After a brief introduction to electron microscopes, aberrations and aberration correction in general, details of design of aberration corrector in PEEM3 is discussed, together with an overview of the project.

Biographical data and research interests: Weishi obtained his Ph. D. in physics from Michigan State University under the supervision of Martin Berz. His thesis topic was the theory and lattice studies of high order achromats. He was then a post-doc at the University of Colorado-Boulder (May 1995 - Mar. 1997) where he worked on a nonperturbative method of resonance correction. From Apr. 1997 - Aug. 2000, he was a post-doc at FNAL; at the Beam Physics Department, he worked mainly on the LHC (tracking and resonance correction using normal forms) and the muon collider (tracking, FFAG, and emittance exchange). At the Main Injector Department, he worked on the commissioning of the Recycler Ring, including fixing the sextupole feed-down problem and the lattice design of the new electron cooling insert.